Promising New Chemicals

Control Crabgrass In Bermuda Grass Lawns

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Many of the Bermuda grass lawns, athletic fields, and golf fairways in Southern Arizona become infested with crabgrass (*Digitaria sanguinalis* and *D. Ischaemum*) during the summer.

These invasions are considered serious, because—among other objections—when crabgrass dies in the fall the leaves and stem may shatter under heavy usage leaving bare ground exposed throughout the winter. While Bermuda grass turns brown after the first frost, it is sufficiently resilient to maintain a vegetative cover over the ground throughout the winter.

The maintaining of a healthy vigorous stand of Bermuda grass is one of the best methods to control crabgrass invasion. This maintenance includes proper irrigation, fertilization, and mowing. There is less opportunity for crabgrass to become established in a Bermuda sod when lawns are mowed and maintained at 1½-2 inches. When herbicides are used to control weeds in lawns, they can only supplement management practices which favor the lawn grasses.

New Herbicides

During the past few years, several herbicides have been tested for use in controlling crabgrass. Among the new chemicals that have shown some promise are phenyl mercuric acetate and potassium cyanate. The use of these and other chemicals for crabgrass control has not become widespread because of high costs and erratic results, which are in part due to the necessity of precise timing of application. During the summer of 1955, the herbicides CMU (3-p-chlorophenyl-1-1-dimethylurea) and DCMU (3-(3, 4-dichlorophenyl)-1-1-dimethylurea)* were tested for controlling crabgrass in Bermuda grass lawns. Applications of both herbicides were made on several dates at rates varying from ¾ to 2 pounds per acre.

Effect of CMU

The effect of applications of CMU and DCMU made on June 14, 25, and July 20 is indicated in the table. In general, when crabgrass was small, the application of either CMU or DCMU resulted in excellent control. When crabgrass was more mature, DCMU still produced excellent control, while CMU was not effective.

The duration of crabgrass control in Bermuda sods by these herbicides is a factor not yet completely determined. Duration of control varies with soil type, amount and frequency of irrigation, and rate of herbicide applied. With a heavy irrigation schedule it has been noted that crabgrass may become re-established about eight weeks after treatment. If the Bermuda sod is vigorous its competition should prevent crabgrass from becoming re-established.

Application Rate

Limited experimentation has shown that applications of 1 to 1½ pounds per acre of DCMU resulted in excellent control of crabgrass. This rate of application of DCMU often caused temporary yellowing of the Bermuda grass, but normal color was regained within a few weeks Its vigorous new growth then covered over the spots of bare ground that resulted from death of the crabgrass.

The successful use of these herbicides for crabgrass control depends on applying them *uniformly at the proper rates.* The amount of chemical needed for crabgrass control is only about one-half the amount that can cause prolonged yellowing of Bermuda grass. The use of CMU or DCMU for crabgrass control should be attempted only by persons thoroughly familiar with the precision application equipment that must be used.

Treatment			Estimated Percent Crabgrass in Bermuda Sod		
Date Applied	Chemical	Rate in pounds per acre	Weeks after treatment 2	4	8
June 14	DCMU	1½	0	0	0
June 14	CMU	2	0	0	0
Untreated check			20	25	15
June 25	DCMU	1¼	2	6	15
June 25	CMU	1¼	15	27	50
Untreated check			37	48	55
July 20	DCMU	2	0	8	5
July 20	CMU	2	15	42	35
Untreated check			35	45	50

The amount of CMU or DCMU needed to control crabgrass while only 1 to 1½ pounds per acre, is *sufficient to cause yellowing of the leaves* of many ornamental shrubs and shade trees if their roots extend under the treated area. The effects, if any, of such applications on most shrubs and trees are temporary.

It is planned to continue this work during the 1956 season. The proper time and rate of application, duration of control, and herbicides related to CMU and DCMU will be investigated. While the results are most promising, there is not sufficient experience at this time to recommend widespread usage of these herbicides for crabgrass control.

*These herbicides are commercially available under the trade names, Karmex W and Karmex D, respectively.

Upper half of picture: solid stand of crabgrass on untreated plot.
Lower half of picture: good stand of Bermuda grass on plot treated with DCMU that was heavily infested with crabgrass when treated.